Shielded Power Inductors – DS5022P

The DS5022 Series of magnetically shielded power inductors is designed for the higher current requirements of portable computers, video recorders and other DC-DC conversion applications.

They feature saturation current ratings as high as 18 Amps and rms current ratings up to 6.5 Amps. Low DC resistance (as low as 0.040 Ohms) keeps power losses to a minimum.

Coilcraft will continue to manufacture and support the DS5022P indefinitely, however for new designs, we recommend the MSS1278 as an alternative. The MSS1278 series is more cost effective, features a smaller footprint, lower DCR and better current handling.

Part Number[1]	Inductance[2] ±20% (µH)	DCR max (Ohms)	SRF typ (MHz)	Isat[3] (A)	Irms[4] (A)
DS5022P-102ML_	1.0	0.016	130	18.0	6.5
DS5022P-222ML_	2.2	0.023	70	14.0	5.0
DS5022P-332ML_	3.3	0.026	60	12.5	4.7
DS5022P-472ML_	4.7	0.028	40	11.5	4.4
DS5022P-562ML_	5.6	0.030	33	10.8	4.1
DS5022P-103ML_	10	0.040	30	8.0	3.9
DS5022P-153ML_	15	0.048	20	7.0	3.4
DS5022P-223ML_	22	0.059	18	6.0	3.1
DS5022P-333ML_	33	0.075	14	5.0	2.8
DS5022P-473ML_	47	0.097	10	4.0	2.4
DS5022P-683ML_	68	0.138	9.0	3.0	2.0
DS5022P-104ML_	100	0.207	7.0	2.4	1.7
DS5022P-154ML_	150	0.293	6.0	2.1	1.3
DS5022P-224ML_	220	0.47	5.0	1.9	1.1
DS5022P-274ML_	270	0.64	4.5	1.4	0.95
DS5022P-334ML_	330	0.78	4.0	1.1	0.86
DS5022P-474ML_	470	1.08	3.0	1.1	0.73
DS5022P-684ML_	680	1.40	2.5	0.96	0.64
DS5022P-824ML_	820	1.70	2.2	0.88	0.58
DS5022P-105ML_	1000	2.01	2.0	0.80	0.53

SPICE models ON OUR WEB SITE

1. When ordering, please specify **termination** and **packaging** code:

DS5022P-105MLD

Termination: **L** = RoHS compliant electroplated gold (<50 µin) over nickel over phos bronze.
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or **S** = non-RoHS tin-lead (63/37).

Packaging: **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel).
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc.
3. DC current at which the inductance drops from its value without current.
4. Current that causes a 40°C temperature rise from 25°C ambient.
5. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

Core material Ferrite
Weight: 2.6 – 3.0 g
Terminations RoHS compliant electroplated gold (<50 µin) over nickel over phos bronze.
Ambient temperature –40°C to +85°C with Irms current, +85°C to +125°C with derated current
Storage temperature Component: –40°C to +85°C. Tape and reel packaging: –40°C to +80°C
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)
Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332
Packaging 250 per 13″ reel Plastic tape: 32 mm wide, 0.38 mm thick, 24 mm pocket spacing, 7.8 mm pocket depth
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

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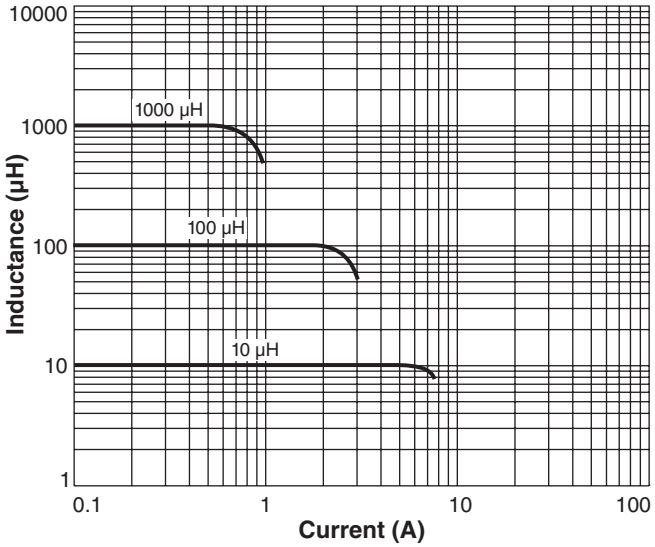
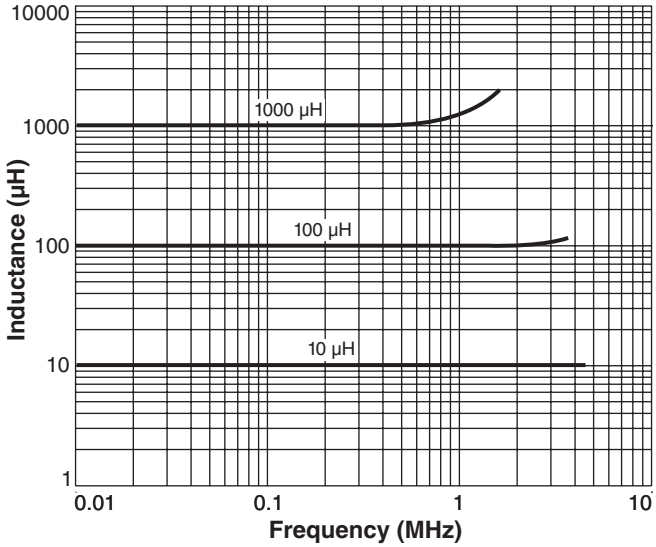
Shielded Power Inductor – DS5022P

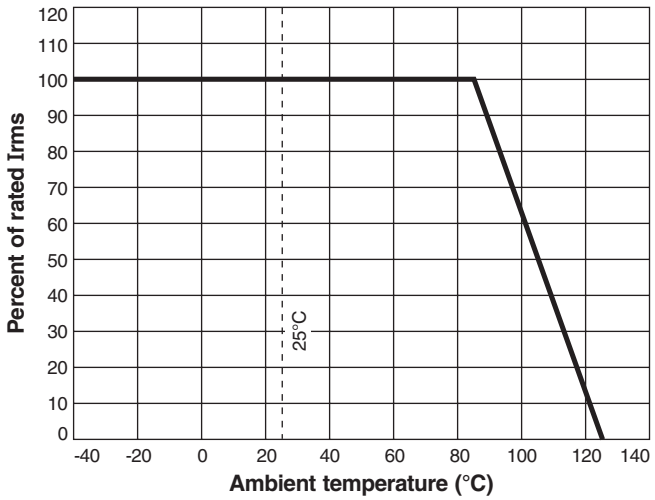
Typical L vs Current

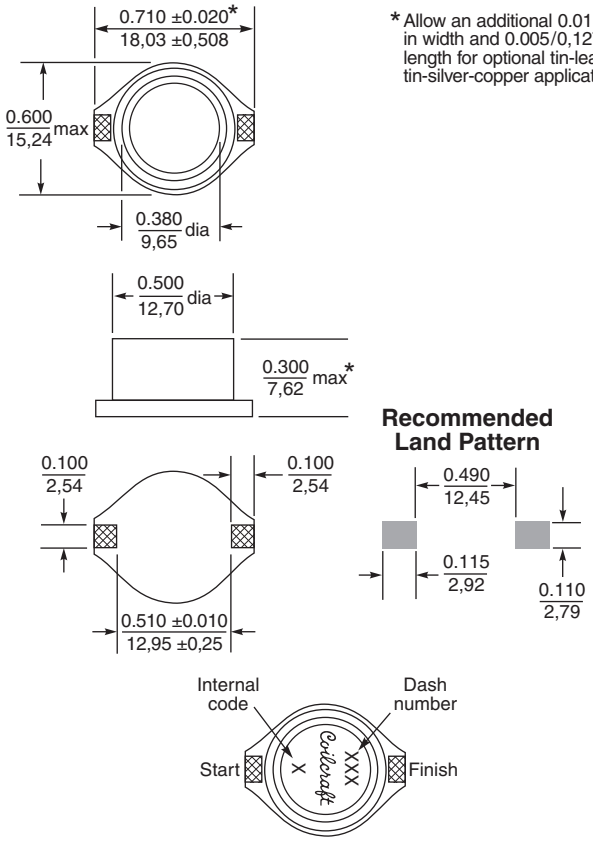


Typical L vs Frequency



Current Derating





* Allow an additional 0.01/0,254 in width and 0.005/0,127 in length for optional tin-lead and tin-silver-copper application.

Part marking since Feb. 2005. Parts manufactured prior to that date may have color dots. Visit www.coilcraft.com/colrpowr.cfm for color dot marking details.

Dimensions are in inches / mm

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